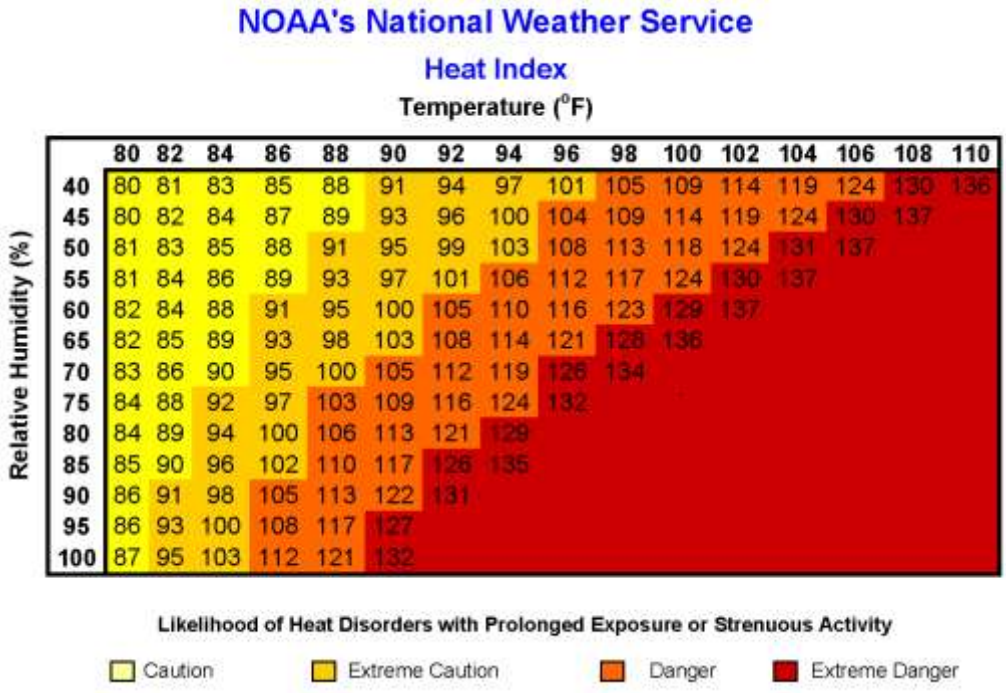


Source: http://nws.noaa.gov/os/heat/index.shtml

Heat-Related Illness Symptoms and First Aid

HEAT CRAMPS

- **Symptoms:**
  - Painful muscle cramps and spasms usually in legs and abdomen
  - Heavy sweating
- **First Aid:**
  - Apply firm pressure on cramping muscles or gentle massage to relieve spasm.
  - Give sips of water, if nausea occurs, discontinue water

HEAT EXHAUSTION

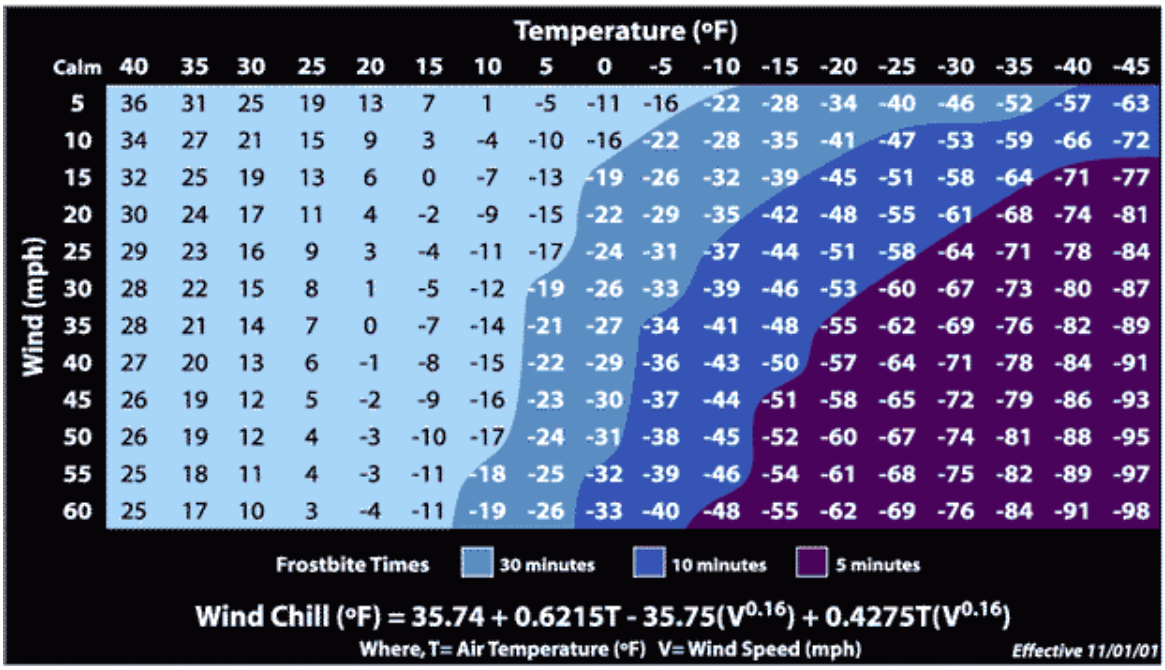
- **Symptoms:**
  - Heavy sweating
  - Weakness
  - Cool, pale, clammy skin
  - Weak pulse
  - Possible muscle cramps
  - Dizziness
  - Nausea and vomiting
  - Fainting
  - Normal temperature possible

- **First Aid:**
    - Move person to a cooler environment
    - Remove or loosen clothing
    - Apply cool, wet cloths
    - Fan or move victim to air conditioned room
    - Offer sips of water. If nausea occurs, discontinue water. If vomiting continues, seek immediate medical attention.

HEAT STROKE (or sunstroke)

- **Symptoms:**
    - Altered mental state
    - Possible throbbing headache, confusion, nausea, dizziness, shallow breathing
    - High body temperature (106°F or higher)
    - Skin may be hot and dry, or patient may be sweating
    - Rapid pulse
    - Possible unconsciousness
- **First Aid:**
    - **Heat stroke is a severe medical emergency. Summon emergency medical assistance or get the victim to a hospital immediately. Delay can be fatal**.
    - Move the victim to a cooler, preferably air-conditioned, environment
    - Reduce body temperature with a water mister and fan or sponging
    - Use fan if heat index temperatures are below the high 90s
    - Use extreme caution
    - If temperature rises again, repeat process
    - Do NOT give fluids

Source: http://www.srh.noaa.gov/jax/?n=cold



Frostbite

Frostbite is damage to body tissue caused by extreme cold. A wind chill of -20° Fahrenheit (F) will cause frostbite in just 30 minutes. Frostbite causes a loss of feeling and a white or pale appearance in extremities, such as fingers, toes, ear lobes or the tip of the nose. If symptoms are detected, get medical help immediately! If you must wait for help, slowly rewarm affected areas. However, if the person is also showing signs of hypothermia, warm the body core before the extremities.

Hypothermia

Hypothermia is a condition brought on when the body temperature drops to less than 95°F. It can kill. For those who survive, there are likely to be lasting kidney, liver and pancreas problems. Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and apparent exhaustion. Take the person's temperature. If below 95°F, seek medical care immediately!

FLOOD SAFETY

Source: http://www.gohsep.la.gov/factsheets/floodsaf.htm

Do Not Walk Through Flowing Water

Drowning is the number one cause of flood deaths. Most occur during flash floods. Six inches of moving water can knock you off your feet. Use a pole or stick to make sure that the ground is still there before you go through an area where the water is not flowing.

Do Not Drive Through a Flooded Area

Most people drown in their cars than anywhere else. Don't drive around road barriers; the road or bridge may be washed out.

Stay Away From Power Lines and Electrical Wires

Electrocution is also a major killer in floods. Electrical current can travel through water. Report downed power lines to your utility company or local emergency manager.

Turn Off Your Electricity When You Return Home

Some appliances, such as television sets, can shock you even after they have been unplugged. Don't use appliances or motors that have gotten wet unless they have been taken apart, cleaned, and dried.

Watch for Animals, Especially Snakes

Small animals that have been flooded out of their homes may seek shelter in yours. Use a pole or stick to poke and turn items over and scare away small animals.

Look Before You Step

After a flood, the ground and floors are covered with debris including broken bottles and nails. Floors and stairs that have been covered with mud can be very slippery.

Be Alert for Gas Leaks

Use a flashlight to inspect for damage. Don't smoke or use candles, lanterns, or open flames unless you are sure that the gas has been turned off and the area has been aired out.

Carbon Monoxide Exhaust Kills

Use a generator or other gasoline-powered machine outdoors. The same goes for camping stoves. Fumes from charcoal are especially deadly -- cook with charcoal only outdoors.

Clean Everything That Get Wet

Floodwaters have picked up sewage and chemicals from roads, farms, factories, and storage buildings. Spoiled food and flooded cosmetics and medicines are health hazards. When in doubt, throw them out.

Take Good Care of Yourself

Recovering from a flood is a big job. It is tough on both the body and the spirit. And the effects a disaster has on you and your family may last a long time. Learn how to recognize and care for anxiety, stress, and fatigue.

Note On Flood Insurance

Most homeowner's insurance policies do NOT offer protection against flood losses. For information about flood insurance, call your local insurance agent, or call the National Flood Insurance Program at (800) 638-6620.

Source: http://www.rutherfordcountytn.gov/ema/tornado.htm

Intensity of tornadoes: is given by the Fujita Tornado Scale. In 2007 this scale was changed to the Enhanced Fujita EF scale with ratings - 0 through 5. The ratings are based on the amount and type of wind damage.

EF Ratings:

EF-0. Light damage
Wind 65 to 85 mph. Causes some damage to siding and shingles

EF-1. Moderate damage
Wind 86 to 110 mph. Considerable roof damage. Winds can uproot trees and overturn single-wide mobile homes. Flagpoles bend.

EF-2. Considerable damage
Wind 111 to 135 mph. Most single-wide mobile homes destroyed. Permanent homes can shift off foundation. Flagpoles collapse. Softwood trees debarked.

EF-3. Severe damage
Wind 136 to 165 mph. Hardwood trees debarked. All but small portions of houses destroyed.

EF-4. Devastating damage
Wind 166 to 200 mph. Complete destruction of well-built residences, large sections of school buildings.

EF-5. Incredible damage
Wind above 200 mph. Significant structural deformation of mid- and high-rise buildings.

Fujita Scale		Enhanced Fujita Scale* * In use since 2007	
F–0	40–72 mph winds	EF–0	65–85 mph winds
F–1	73–112 mph	EF–1	86–110 mph
F–2	113–157 mph	EF–2	111–135 mph
F–3	158–206 mph	EF–3	136–165 mph
F–4	207–260 mph	EF–4	166–200 mph
F–5	261–318 mph	EF–5	>200 mph

Source: http://weather.about.com/od/imagegallery/ig/Weather-Map-Symbols/Beaufort-Wind-Scale.htm

Beaufort*	Avg Miles per Hour	Knots	Surroundings
0 calm		0-1	Smoke rises vertically and the sea is mirror smooth
1 light air	1.2 - 3.0	1 - 3	Smoke moves slightly with breeze and shows direction of wind
2 light breeze	3.7 - 7.5	4 - 6	You can feel the breeze on your face and hear the leaves start to rustle
3 gentle breeze	8.0 - 12.5	7 - 10	Smoke will move horizontally and small branches start to sway. Wind extends a light flag
4 moderate	13.0 - 18.6	11 - 16	Loose dust or sand on the ground will move and larger branches will sway, loose paper blows
5 fresh breeze	19.3 - 25.0	17 - 21	Surface waves form of water and small trees sway
6 strong breeze	25.5 - 31.0	22 - 27	Trees begin to bend with the force of the wind and causes whistling in telephone wires. Some spray on the sea surface
7 moderate gale	32.0 - 38.0	28 - 33	Large trees sway. Moderate sea spray
8 fresh gale	39.0 - 46.0	34 - 40	Twigs break from trees, and long streaks of foam appear on the ocean
9 strong gale	47.0 - 55.0	41 - 47	Branches break from trees
10 whole gale	56.0 - 64.0	48 - 55	Trees are uprooted and the sea takes on a white appearance
11 storm	65.0 - 74.0	56 - 63	Widespread damage
12 hurricane	75+	64 +	Structural damage on land, and storm waves at sea

BEAUFORT WIND SCALE

http://www.regione.emilia-romagna.it/protezionecivile.htm

Grade	Wind name	Knots	km/h	Effects		Height of waves (metres)
				Earth	Sea	
0	Calm	<1	<1	Smoke rises vertical	Flat sea	-
1	Breath of wind	1-3	1-5	The wind bends smoke	Small ripples with no white foamy crests	0,1
2	Light breeze	4-6	6-11	It can be felt on the face	Short but neater ripples with unbroken crests	0,2 – 0,3
3	Stiff breeze	7-10	12-19	It shakes leaves	Very small waves; crests begin to break	0,6 - 1
4	Moderate	11-16	20-28	It lifts dust and papers	Small waves that begin to grow longer; more frequent, neater foam	1 – 1,5
5	Stiff	17-21	29-38	It shakes branches	Moderate waves that grow longer in shape; possible sprays	2 – 2,5
6	Cool	22-27	39-49	It shakes big branches	Bigger waves; white foamy crests are longer everywhere	3 - 4
7	Heavy	28-33	50-61	It impedes walking	The sea swells up; white foam forms when waves break up	4 – 5,5
8	Gale	34-40	62-74	It shakes big trees	Medium-high, longer waves; crests start to break up in sprays	5,5 - 7,5
9	Heavy gale	41-47	75-88	It sweeps chimneys and roof tiles away	High waves; tight strips of foam form in the direction of the wind	7 - 10
10	Storm	48-55	89-102	It uproots trees	Very high waves with long crests; the sea looks completely white; waves fall down heavily and violently; poor visibility	9 – 12,5
11	Storm at sea	56-63	103-117	Serious devastation	Exceptionally high waves (small- and medium-tonnage ships disappear for a few seconds); poor visibility	11,5 - 16
12	Hurricane	64 plus	118 plus	Very serious catastrophes	The air is full of foam ad sprays; the sea is totally white because of foam banks adrift; Very poor visibility	14 plus

Source: http://www.nws.noaa.gov/om/hazstats/resources/weather_fatalities.pdf

Year	Lightning Fatalities	Tornado Fatalities	Flood Fatalities	Hurricane Fatalities	Heat Fatalities	Cold Fatalities	Winter Fatalities	Rip Curr. Fatalities	Wind Fatalities	All Hazard Damages (M)	All Weather Fatalities
1977	98	43	210	0							*Includes categories not listed at right.*
1978	88	53	125	36							
1979	63	83	121	22							
1980	74	28	82	4							
1981	66	24	84	0							
1982	77	64	155	0							
1983	77	34	204	22							*See U.S. Summary for details.*
1984	67	122	126	4							
1985	74	93	166	30							
1986	68	15	94	11	40		69				395
1987	88	59	70	0	38		30				349
1988	68	32	31	9	41	17	55			$6,151.50	316
1989	67	50	85	38	6	121	63			$13,816.10	501
1990	74	53	142	0	32	13	48			$6,021.80	461
1991	73	39	61	19	36	13	45			$6,203.40	391
1992	41	39	62	27	8	14	59			$38,395.40	308
1993	43	33	103	2	20	18	66			$28,431.30	388
1994	69	69	91	9	29	52	29			$4,441.00	372
1995	85	30	80	17	1,021	22	17		84	$11,383.10	1,362
1996	52	25	131	37	36	62	86		54	$7,975.40	540
1997	42	67	118	1	81	51	90		75	$10,785.60	600
1998	44	130	136	9	173	11	68		65	$16,110.50	687
1999	46	94	68	19	502	7	41		62	$12,253.40	908
2000	51	41	38	0	158	26	41		51	$8,950.30	476
2001	44	40	48	24	166	4	18		31	$11,839.20	464
2002	51	55	49	51	167	11	17	43	45	$5,674.80	540
2003	43	54	86	14	36	20	28	41	43	$11,411.70	438
2004	32	35	82	34	6	27	28	32	42	$26,798.50	369
2005	38	38	43	1016	158	24	34	35	23	$100,819.80	1,451
2006	48	67	76	0	253	2	17	23	40	$11,721.10	567
2007	45	81	87	1	105	47	16	57	34	$12,289.28	515
2008	27	126	82	12	71	44	21	68	70	$30,324.12	569
2009	34	21	56	2	45	33	28	55	47	$7,459.07	373
2010	29	45	103	0	138	34	21	64	33	$9,892.74	490
2011	26	553	113	9	206	29	17	41	76	$23,939.52	1,096
2012	28	70	29	4	155	8	28	42	104	$38,692.09	528
Total	**9235**	**7444**	**7507**	**3322**	**3727**	**710**	**1080**	**501**	**979**	**$461,780.72**	**15,454**
10-Yr. Avg	**35**	**109**	**76**	**109**	**117**	**27**	**24**	**46**	**51**	**$27,334.79**	**640**
30-Yr Avg	**52**	**74**	**89**	**47**							

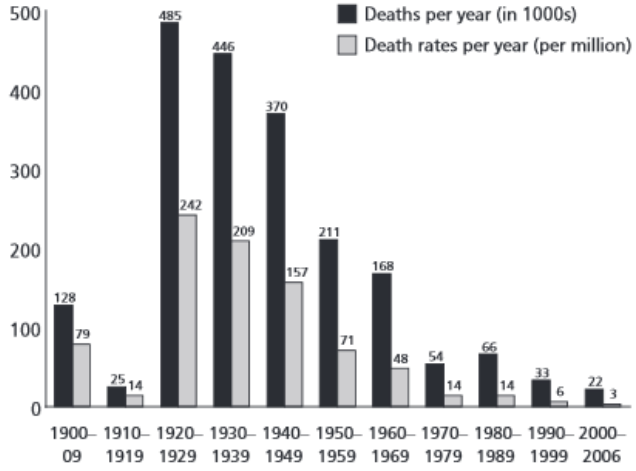
Source: http://www.csccc.info/reports/report_23.pdf

Table 2 **Global deaths per year due to various causes, early 2000s. Note: All data are for 2002, except for deaths due to extreme weather events, which are based on the annual average from 2000–2006**

Cause of death	*No. of deaths*	*Percent of total deaths*
I. Communicable Diseases	**18,324,000**	**32.13%**
Tuberculosis	1,566,000	2.75%
HIV/AIDS	2,777,000	4.87%
Diarrhoeal diseases	1,798,000	3.15%
Malaria	1,272,000	2.23%
Other tropical diseases	129,000	0.23%
Other infectious & parasitic diseases	3,362000	5.90%
Subtotal – Infectious and parasitic diseases	10,904,000	19.12%
Respiratory infections	3,963,000	6.95%
Nutritional deficiencies	485,000	0.85%
Maternal and perinatal conditions	2,972,000	5.21%
II. Non-communicable Conditions	**33,537,000**	**58.81%**
Malignant neoplasms	7,121,000	12.49%
Cardiovascular diseases	16,733,000	29.34%
Respiratory diseases	3,702,000	6.49%
Other non-communicable conditions	5,981,000	10.49%
III. Injuries	**5,168,000**	**9.06%**
Road traffic accidents	1,192,000	2.09%
Violence	559,000	0.98%
War	172,000	0.30%
Extreme weather events	***19,868***	***0.03%***
All other injuries	3,225,600	5.66%

Sources: WHO (2004), EM-DAT (2007)

Figure 1 **Global death and death rates due to extreme events, 1900–2006**



Note that in figures 1 through 4, data for the last period are averaged over seven years worth of data.
Sources; EM-DAT (2007); McEvedy and Jones (1978); WRI (2005, 2007)

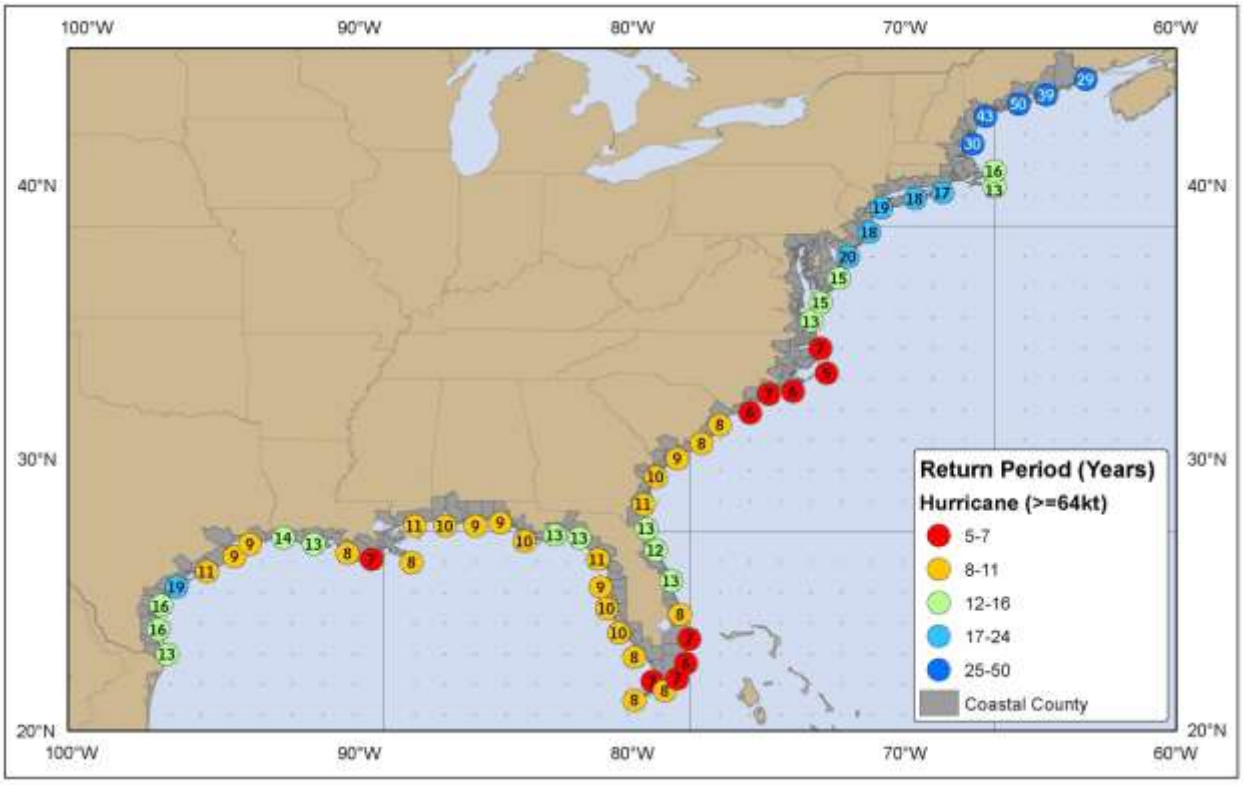
Source: http://www.nhc.noaa.gov/climo/

Tropical Depression: Maximum winds 38 mph (33 kts) or less

Tropical Storm: Maximum winds 39 to 73 mph (34-63 kts)

Hurricane: Maximum winds greater than 74 mph (64 kts). Also called typhoons in the Pacific and Indian Oceans.

Major Hurricane: Maximum winds 111 mph (96 kts) or greater. CAT 3, CAT 4, CAT 5.




CONTINENTAL UNITED STATES
HURRICANE STRIKES 1950-2011*
Saffir-Simpson Hurricane Categories
Sustained Winds (MPH)
74-95 Category 1
96-110 Category 2
111-130 Category 3
131-155 Category 4
>155 Category 5
NOAA's NATIONAL CLIMATIC DATA CENTER ▪ ASHEVILLE, N.C.